Drinking Water Surveillance Program

LAMBTON COUNTY (SARNIA) WATER SUPPLY SYSTEM

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LAMBTON COUNTY (SARNIA) WATER SUPPLY SYSTEM

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

FEBRUARY 1990

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

LAMBTON COUNTY (SARNIA) WATER SUPPLY SYSTEM
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Lambton County (Sarnia) Water Supply System has a direct filtration plant which treats water from Lake Huron where it enters the St. Clair River. The process consists of coagulation, flocculation, filtration, disinfection and fluoridation. This plant has a design capacity of 189 x 1000 m^3/day and serves a population of approximately 88,000.

Water samples from the raw, treated and two distribution sites were taken on a monthly basis and analyzed for approximately 160 parameters. Parameters were divided into the following groups Bacteriological, Inorganic and Physical(Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticide and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed in June and November only.

A summary of results is shown in Table 1.

Inorganic and Physical parameters were below any applicable health related guidelines.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Lambton County (Sarnia) Water Supply System produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP)

SUMMARY TABLE BY SCAN

	SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE	SITE 2 TESTS	SITE 2 POSITIVE	SITE 2 %POSITIVE
	BACTERIOLOGICAL	35	19	54	30	5	16	30	2	6	27	5	18
	CHEMISTRY (FLD)	35	35	100	72	72	100	116	116	100	96	96	100
	CHEMISTRY (LAB)	242	179	73	205	141	68	370	280	75	278	213	76
	METALS	263	97	36	216	85	39	513	215	41	376	145	38
	CHLOROAROMATICS	169	0	0	154	0	0	154	0	0	112	0	0
	CHLOROPHENOLS	6	0	0	6	0	0	.	.	.	.	.	.
	PAH	204	0	0	187	0	0	.	.	.	.	.	.
	PESTICIDES & PCB	396	0	0	364	0	0	351	0	0	262	0	0
	PHENOLICS	12	3	25	11	1	9	.	.	.	.	.	.
	SPECIFIC PESTICIDES	50	0	0	50	0	0	0	0	0	0	0	0
	VOLATILES	258	10	3	229	32	13	229	31	13	173	24	13
TOTAL		1669	343		1524	336		1763	644		1324	483	

NO HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

LAMBTON COUNTY (SARNIA) WATER SUPPLY SYSTEM
1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP program was initiated at the Lambton County (Sarnia) Water Supply System during the fall of 1985 as part of a study on the St. Clair/Detroit River area. Annual reports were published for 1986 (ISBN 0-7729-2563-1) and 1987 (ISSN 0840-5107). Other historical Lambton County (Sarnia) Water Supply System data is available in the "Drinking Water Survey St. Clair - Detroit River Area" published by the Ministry of the Environment in 1986.

This report contains information and results for 1988.

PLANT DESCRIPTION

The Lambton County (Sarnia) Water Supply System has a direct filtration plant which treats water from Lake Huron as it enters

the St. Clair River. The process consists of coagulation, flocculation, filtration, disinfection and fluoridation. A polyelectrolyte may be added when required as a filter aid. This plant has a design capacity of 189 x 1000 m^3/day and flows on day of sampling ranging from 47 x 1000 m^3/day to 193 x 1000 m^3/day. It serves a population of approximately 88,000.

The plant location is shown in Figure 1. Plant Process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from four DWSP approved locations;

i) Plant Raw - The water originated from the intake pipe prior to chlorination and was sampled through a stainless steel line. The sample tap is located near the lowlift well.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a stainless steel sample line. The sample tap is located near the highlift pumps.

iii) Distribution System - Site 1 - This house is approximately 6.5 kilometers from the plant. Water was sampled through copper plumbing from the basement

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

LAMBTON AREA WATER TREATMENT PLANT

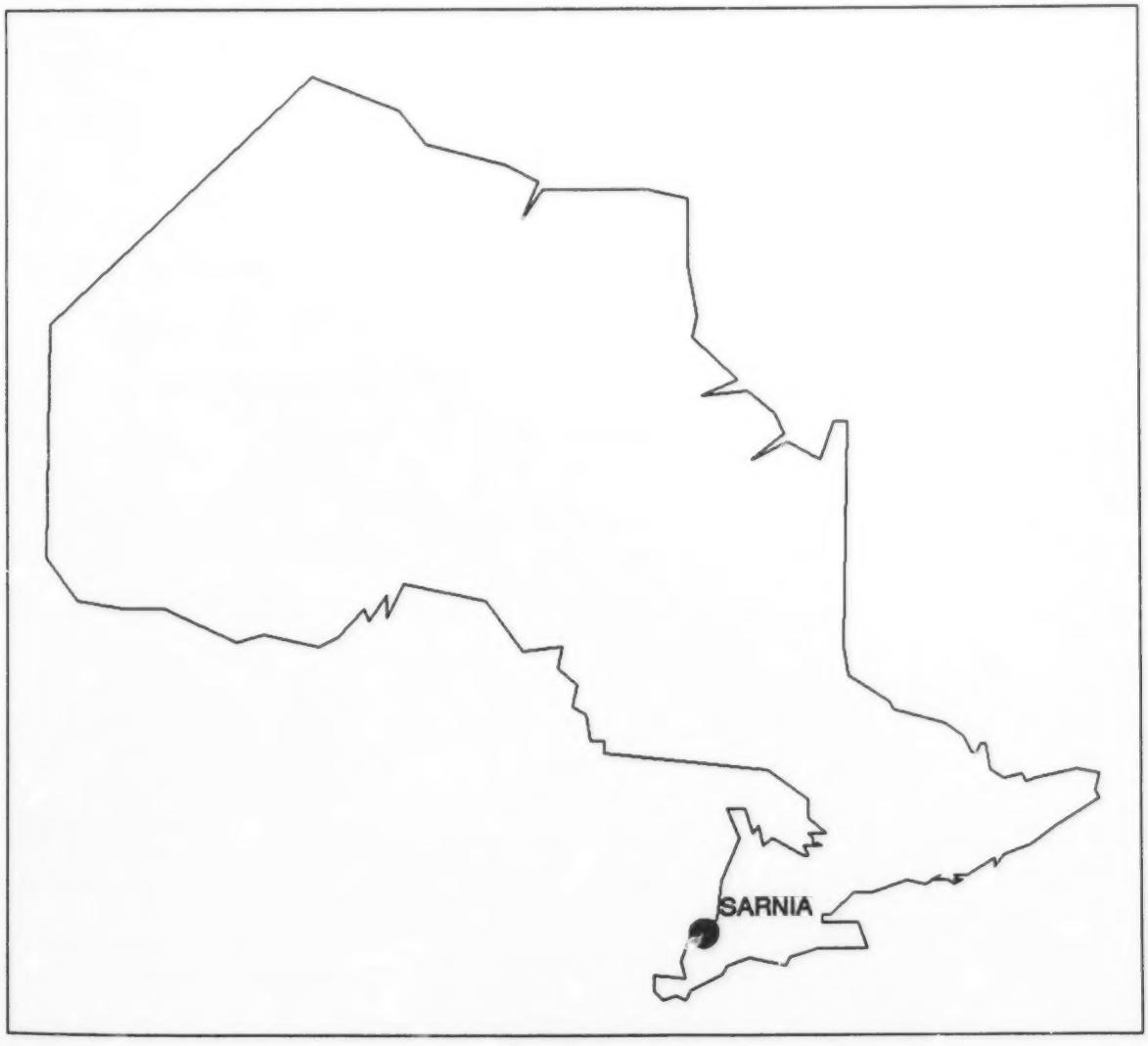

FIGURE 2

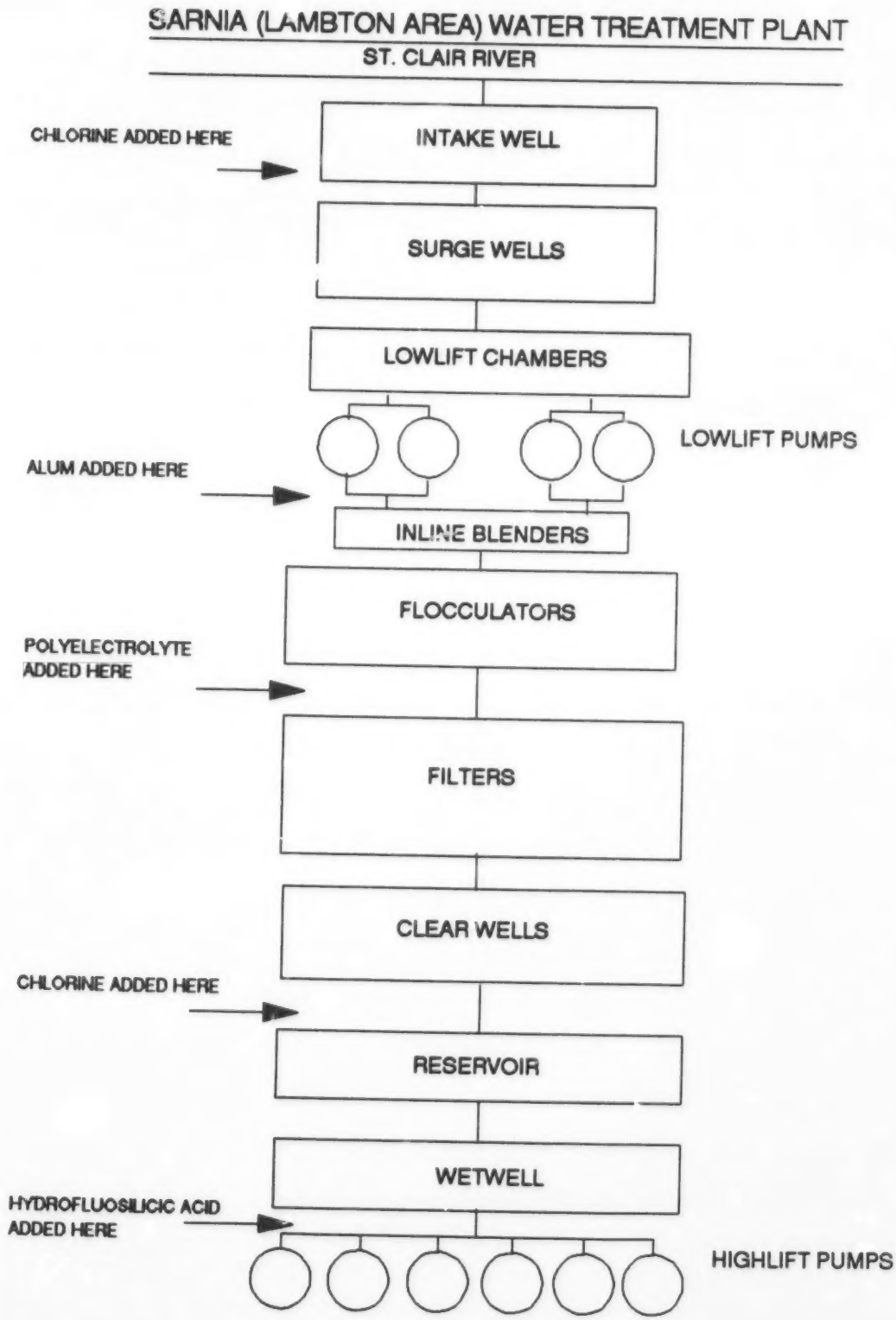
SARNIA (LAMBTON AREA) WATER TREATMENT PLANT
ST. CLAIR RIVER
CHLORINE ADDED HERE
INTAKE WELL
SURGE WELLS
LOWLIFT CHAMBERS
LOWLIFT PUMPS
ALUM ADDED HERE
INLINE BLENDERS
FLOCCULATORS
POLYELECTROLYTE ADDED HERE
FILTERS
CLEAR WELLS
CHLORINE ADDED HERE
RESERVOIR
WETWELL
HYDROFLUOSILICIC ACID ADDED HERE
HIGHLIFT PUMPS

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

LAMBTON COUNTY (SARNIA) WATER SUPPLY SYSTEM

LOCATION:	1215 FORT STREET P.O. BOX 790 SARNIA, ONTARIO (519-344-7429)
SOURCE:	RAW WATER SOURCE - LAKE HURON/ST. CLAIR RIVER
DESIGN CAPACITY:	189 (1000 M^3/DAY)
OPERATION:	MINISTRY
PLANT SUPERINTENDENT:	J. HORSBURGH
MINISTRY REGION:	SOUTHWESTERN
DISTRICT OFFICER:	M. LOOBY

MUNICIPALITY SERVED	POPULATION
MOORE TWP	10,097
POINT EDWARD VILLAGE	2,373
SARNIA CITY	50,233
SARNIA TWP	20,913
SOMBRA	4,249

laundry tap.

iv) Distribution System - Site 2 - This house is approximately 5.5 kilometers from the plant. Water was sampled through copper plumbing from the basement laundry tap.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At both distribution system locations two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analyses carried out on standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before the sample was taken.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For

example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted.

RESULTS

Water at the Lambton County (Sarnia) Water Supply System was sampled for approximately 160 parameters on a monthly basis. Specific Pesticides and Chlorophenols were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenols were only analysed in the raw and treated water from the plant.
As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for volatiles is no longer valid after four weeks of storage, volatile results for February and March are not available.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported. Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed on the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occuring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable values, as defined by established MOE Laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is

repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is thus not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present twelve times in the treated and distributed water. The positive parameters were Standard Plate Count, Total Coliform and/or Total Coliform Background. Total coliforms were found at 4/100 mL and 2/100 mL in the December treated and and free flow Site 1 samples, respectively.

Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35°C after 48 hours) in the ODWOs is 500 organisms per mL (based on a geometric mean of 5 or more samples). A high Standard Plate Count was present in the July treated water; the count in the corresponding raw water sample was low indicating that the samples were reversed. No indicators of unsafe water were detected at this time. A total Chlorine Residual of 0.25 mg/L was detected in the treated water sample. No samples contained bacteriological results over any applicable health related ODWOs.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. For these reasons, the occasional finding of low numbers of coliform organisms is not unexpected. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for Laboratory and Field Chemistry scans were below any applicable health related ODWOs.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of

the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded eight times in the treated water and free flow distributed water.

As part of the treatment process, Hydrofluosilicic Acid is added to the treated water (Table 3). Where fluoridation is practiced, the fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. This level was maintained as can be determined from the Fluoride values reported in Table 5.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for Sarnia varies between positive and negative.

The ODWO indicate that a hardness level of between 80 and 100 mg/L as calcium carbonate for domestic waters, provides an acceptable balance between corrosion and incrustation. Water supplies with a hardness greater than 200 mg/L are considered poor, and would possess a tendency to form scale deposits and result in excessive soap consumption. Hardness values for the Sarnia water ranged from 92 to 107 mg/L as calcium carbonate.

Metals

The results reported for the Metal scan were below any health related ODWOs.

Elevated levels of Copper, Lead, Zinc and occasionally Nickel were detected in the standing samples from the distribution system as compared to the free flow samples thus, indicating that these metals were picked up from the household plumbing as the water stood overnight. Although the Langelier Index indicates minimal potential for corrosion some metals will be leached in standing samples in most supplies. Although the Langelier Index indicates minimal potential for corrosion some metals will be leached in standing samples in most supplies.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline five times in the treated water.

Organic Parameters

Chloroaromatics

Results of the Chloroaromatics scan showed that one parameter was detected:

Hexachloroethane

Hexachloroethane was detected at trace levels, in the treated water and in the Site 2 water for the October sampling.

Review of these results, along with information from other water supplies on DWSP , would indicate that certain Chloroaromatics appear more frequently in the treated water than in the raw. These occurrences could possibly be due to a reaction of chlorine with organics present in the water or in the distribution system.

Chlorophenols

Results of the Chlorophenol scan showed that one Chlorophenol was detected:

2,4,6-Trichlorophenol

2,4,6-Trichlorophenol was detected at a trace level, in one of the two treated water samples analyzed.

Pesticides and PCB (Polychlorinated Biphenyls)

Results of the Pesticide and PCB scan showed that no PCBs were

detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (benzene hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer most predominantly found in surface waters in the Great Lakes Basin as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, nine times in the raw water, nine times in the treated water, eleven times in the Site 1 water and seven times in the Site 2 water.

Lindane was detected at trace levels, once in the raw water, once in the treated water, three times in the Site 1 water and once in the Site 2 water.

Specific Pesticides

Results of the Specific Pesticide scan showed that no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours,

particularly in chlorinated water. Phenolics were detected at 1.8, 1.6 and 1.0 ug/L in the June, July and December raw water samples and at 1.6 ug/L in the June treated water sample. Phenolics were detected at trace levels, three times in the raw water and five times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

Results of the PAH scan showed that no PAHs were detected.

Volatiles

Results of the Volatile scan showed that eight parameters, other than Trihalomethanes(THMs), were detected:

- Benzene
- Toluene
- Ethylbenzene
- M-Xylene
- O-Xylene
- Styrene
- Tetrachloroethylene
- 1,4-Dichlorobenzene

Benzene was detected at trace levels, once in the raw water , treated water and Site 2 water.

Toluene was detected at trace levels, twice in the raw water, four times in the treated water, three times in the Site 1 water and once in the Site 2 water. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, six times in the raw water, six times in the treated water, four times in the Site 1 water amd three times in the Site 2 water.

Meta and Para-Xylene (M and P-Xylene) are reported as one compound, M-Xylene. It was detected at a trace level, once in the raw water.

Ortho-Xylene (O-Xylene) was detected at trace levels, once in the

raw water, three times in the treated water, once in the Site 1 water and once in the Site 2 water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

Tetrachloroethylene (T-Chloroethylene) was detected at trace levels, twice in the treated water, twice in the Site 1 water and twice in the Site 2 water.

1,4-Dichlorobenzene was detected at a trace level, once in the Site 2 water.

THMs are known to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were detected in all treated waters, Bromoform was detected at trace levels. All Total THM occurrences, ranging from 30.7 to 52.6 ug/L, were well below the ODWO of 350 ug/L.

THMs were detected in the August and October raw water samples at

14.5 and 37 ug/L and at trace levels in April and July.

CONCLUSIONS

The Lambton County (Sarnia) Water Supply System for the sample year of 1988 produced good quality water at the plant and this was maintained in the distribution system.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1986, 1987 or 1988.

RECOMMENDATIONS

Two recommendations can be made as follows:

1) During 1988 four raw water samples contained THMs. This sample site should be reassessed to ensure that it still meets the DWSP sampling protocol.

2) Consideration should be given to reducing the frequency of sampling at this supply.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) SAMPLE DAY CONDITIONS 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)			
			PRE-CHLORINATION	COAGULATION	FLUORIDATION	POST-CHLORINATION
DATE	RETENTION TIME(HRS)	FLOW (1000M3)	CHLORINE	ALUM LIQUID	HYDROFLUOSILICIC ACID	CHLORINE
JAN 06	28.0	.	1.00	3.82	1.20	.62
FEB 03	24.0	65.4	1.00	4.84	1.32	.70
MAR 09	27.0	.	1.00	4.50	1.20	.80
APR 07	24.0	58.8	1.00	4.14	1.20	2.54
MAY 04	24.0	78.4	1.20	4.50	1.20	.26
JUN 08	10.9	181.4	1.10	5.30	1.30	.40
JUL 06	10.2	193.0	1.10	5.80	1.10	.26
AUG 04	17.0	135.4	1.20	7.00	1.20	.33
SEP 08	10.4	81.6	1.25	7.66	1.14	.61
OCT 06	24.0	49.8	1.20	7.60	1.20	.65
NOV 09	24.0	53.1	1.30	5.17	1.15	.39
DEC 07	24.0	71.2	1.20	6.90	.	.21

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	10	3	0	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	5	4	0	6	3	0	6	1	0	6	3	0
	P/A BOTTLE	.	.	.	6	0	0	6	0	0	5	0	0
	TOTAL COLIFORM MF	10	4	0	9	1	0	9	1	0	8	0	0
	T COLIFORM BCKGRD MF	10	8	0	9	1	0	9	0	0	8	2	0
*TOTAL SCAN BACTERIOLOGICAL		35	19	0	30	5	0	30	2	0	27	5	0
*TOTAL GROUP BACTERIOLOGICAL		35	19	0	30	5	0	30	2	0	27	5	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	12	12	0	21	21	0	16	16	0
	FLD CHLORINE FREE	.	.	.	12	12	0	19	19	0	16	16	0
	FLD CHLORINE (TOTAL)	.	.	.	12	12	0	21	21	0	16	16	0
	FLD PH	12	12	0	12	12	0	22	22	0	16	16	0
	FLD TEMPERATURE	11	11	0	12	12	0	20	20	0	16	16	0
	FLD TURBIDITY	12	12	0	12	12	0	13	13	0	16	16	0
*TOTAL SCAN CHEMISTRY (FLD)		35	35	0	72	72	0	116	116	0	96	96	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	10	10	0	21	21	0	16	16	0
	CALCIUM	12	12	0	10	10	0	21	21	0	16	16	0
	CYANIDE	12	0	0	11	0	0	11	0	0	7	0	0
	CHLORIDE	12	12	0	10	10	0	20	20	0	16	16	0
	COLOUR	12	0	12	10	0	9	20	0	12	16	0	10

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	CONDUCTIVITY	12	12	0	10	10	0	21	21	0	16	16	0
	FLUORIDE	11	11	0	10	10	0	20	20	0	16	16	0
	HARDNESS	12	12	0	10	10	0	21	21	0	16	16	0
	IONCAL	12	5	0	12	4	0	22	10	0	16	6	0
	LANGELIERS INDEX	12	12	0	7	7	0	12	12	0	7	7	0
	MAGNESIUM	12	12	0	10	10	0	21	21	0	16	16	0
	SODIUM	12	12	0	10	10	0	21	21	0	16	16	0
	AMMONIUM TOTAL	12	7	5	10	3	6	22	9	13	16	6	9
	NITRITE	12	4	7	10	0	7	22	1	18	16	3	5
	TOTAL NITRATES	12	12	0	10	10	0	22	22	0	16	16	0
	NITROGEN TOT KJELD	11	11	0	10	6	4	20	12	8	16	13	3
	PH	12	12	0	10	10	0	21	21	0	16	16	0
	PHOSPHORUS FIL REACT	12	2	10	10	8	2	.	.	.	.	.	.
	PHOSPHORUS TOTAL	11	2	7	10	0	10	.	.	.	.	.	.
	TOTAL SOLIDS	1	1	0	1	1	0	2	2	0	2	2	0
	SULPHATE	5	5	0	4	4	0	10	10	0	6	6	0
	TURBIDITY	11	11	0	10	8	2	20	15	5	16	10	4
*TOTAL SCAN CHEMISTRY (LAB)		242	179	41	205	141	40	370	280	56	278	213	31
METALS	SILVER	11	0	2	9	0	5	22	0	12	16	0	12
	ALUMINUM	11	11	0	9	9	0	22	22	0	16	16	0
	ARSENIC	10	0	10	8	0	7	20	0	20	16	0	16
	BARIUM	11	11	0	9	9	0	22	22	0	16	16	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	BORON	11	2	9	9	2	7	22	7	15	16	5	11
	BERYLLIUM	11	0	6	9	0	4	22	0	9	16	0	7
	CADMIUM	11	0	0	9	0	1	22	0	2	16	0	1
	COBALT	11	0	11	9	0	9	22	0	19	16	0	14
	CHROMIUM	11	3	8	9	3	6	22	8	14	16	5	11
	COPPER	11	7	6	9	6	3	22	21	1	16	16	0
	IRON	11	2	8	9	1	4	22	0	18	16	0	11
	MERCURY	12	8	2	11	7	2	11	4	1	8	4	2
	MANGANESE	11	11	0	9	6	3	22	18	4	16	4	12
	MOLYBDENUM	11	4	7	9	6	3	22	11	11	16	6	10
	NICKEL	11	0	9	9	0	7	22	4	14	16	2	9
	LEAD	11	2	9	9	4	5	22	22	0	16	14	2
	ANTIMONY	11	5	6	9	5	4	22	10	12	16	6	10
	SELENIUM	10	0	5	8	0	8	20	0	18	16	0	14
	STRONTIUM	11	11	0	9	9	0	22	22	0	16	16	0
	TITANIUM	11	10	1	9	8	1	22	20	2	16	16	0
	THALLIUM	11	0	3	9	0	1	22	0	9	16	0	8
	URANIUM	11	6	5	9	2	7	22	2	20	16	7	9
	VANADIUM	11	1	10	9	2	7	22	6	16	16	4	12
	ZINC	11	5	6	9	6	3	22	16	6	16	8	8
*TOTAL SCAN METALS		263	97	123	216	85	97	513	215	223	376	145	179
*TOTAL GROUP INORGANIC & PHYSICAL		540	311	164	493	298	137	999	611	279	750	454	210
CHLOROAROMATICS	HEXACHLOROBUTADIENE	12	0	0	11	0	0	11	0	0	8	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	123 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	1234 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	1235 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	124 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	1245 T-CHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	135 TRICHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	HCB	12	0	0	11	0	0	11	0	0	8	0	0
	HEXACHLOROETHANE	12	0	0	11	0	1	11	0	0	8	0	1
	OCTACHLOROSTYRENE	12	0	0	11	0	0	11	0	0	8	0	0
	PENTACHLOROBENZENE	12	0	0	11	0	0	11	0	0	8	0	0
	236 TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0	8	0	0
	245 TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0	8	0	0
	26A TRICHLOROTOLUENE	12	0	0	11	0	0	11	0	0	8	0	0
*TOTAL SCAN CHLOROAROMATICS		168	0	0	154	0	1	154	0	0	112	0	1
CHLOROPHENOLS	234 TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	1	0	0	1	0	1	.	.	.	.	.	.
	PENTACHLOROPHENOL	1	0	0	1	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		6	0	0	6	0	1	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE	RAW		TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	12	0	0	11	0	0	.	.	.	.	.	.
	ANTHRACENE	12	0	0	11	0	0	.	.	.	.	.	.
	FLUORANTHENE	12	0	0	11	0	0	.	.	.	.	.	.
	PYRENE	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	11	0	0	.	.	.	.	.	.
	CHRYSENE	12	0	0	11	0	0	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	11	0	0	.	.	.	.	.	.
	PERYLENE	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(A) PYRENE	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	11	0	0	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	11	0	0	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	11	0	0	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	11	0	0	.	.	.	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.	.	.	.
	CORONENE	12	0	0	11	0	0	.	.	.	.	.	.
*TOTAL SCAN PAH		204	0	0	187	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	11	0	0	11	0	0	8	0	0
	ALPHA BHC	12	0	9	11	0	9	11	0	11	8	0	7

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	BETA BHC	12	0	0	11	0	0	11	0	0	8	0	0
	LINDANE	12	0	1	11	0	1	11	0	3	8	0	1
	ALPHA CHLORDANE	12	0	0	11	0	0	11	0	0	8	0	0
	GAMMA CHLORDANE	12	0	0	11	0	0	11	0	0	8	0	0
	DIELDRIN	12	0	0	11	0	0	11	0	0	8	0	0
	METHOXYCHLOR	12	0	0	11	0	0	11	0	0	8	0	0
	ENDOSULFAN 1	12	0	0	11	0	0	11	0	0	8	0	0
	ENDOSULFAN II	12	0	0	11	0	0	11	0	0	8	0	0
	ENDRIN	12	0	0	11	0	0	11	0	0	8	0	0
	ENDOSULFAN SULPHATE	12	0	0	11	0	0	11	0	0	8	0	0
	HEPTACHLOR EPOXIDE	12	0	0	11	0	0	11	0	0	8	0	0
	HEPTACHLOR	12	0	0	11	0	0	11	0	0	8	0	0
	MIREX	12	0	0	11	0	0	11	0	0	8	0	0
	OXYCHLORDANE	12	0	0	11	0	0	11	0	0	8	0	0
	OPDDT	12	0	0	11	0	0	11	0	0	8	0	0
	PCB	12	0	0	11	0	0	11	0	0	8	0	0
	DDD	12	0	0	11	0	0	11	0	0	8	0	0
	PPDDE	12	0	0	11	0	0	11	0	0	8	0	0
	PPDDT	12	0	0	11	0	0	11	0	0	8	0	0
	AMETRINE	12	0	0	11	0	0	10	0	0	8	0	0
	ATRAZINE	12	0	0	11	0	0	10	0	0	8	0	0
	ATRATONE	12	0	0	11	0	0	10	0	0	8	0	0
	CYANAZINE	12	0	0	11	0	0	10	0	0	8	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0	5	0	0	3	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0	5	0	0	3	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	PROMETONE	12	0	0	11	0	0	10	0	0	8	0	0
	PROPAZINE	12	0	0	11	0	0	10	0	0	8	0	0
	PROMETRYNE	12	0	0	11	0	0	10	0	0	8	0	0
	METRIBUZIN	12	0	0	11	0	0	10	0	0	8	0	0
	SIMAZINE	12	0	0	11	0	0	10	0	0	8	0	0
	ALACHLOR	12	0	0	11	0	0	10	0	0	8	0	0
	METOLACHLOR	12	0	0	11	0	0	10	0	0	8	0	0
*TOTAL SCAN PESTICIDES & PCB		396	0	10	364	0	10	351	0	14	262	0	8
PHENOLICS	PHENOLICS	12	3	3	11	1	5	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		12	3	3	11	1	5	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0	0	0	0
	2,4,5-T	1	0	0	1	0	0	.	.	.	.	.	.
	2,4-D	1	0	0	1	0	0	.	.	.	.	.	.
	2,4-DB	1	0	0	1	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	1	0	0	1	0	0	.	.	.	.	.	.
	DICAMBA	1	0	0	1	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	1	0	0	1	0	0	.	.	.	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE											
		RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	2	0	0	2	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.
	BENOMYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUX	2	0	0	2	0	0	.	.	.	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.	.	.	.
	CICP	2	0	0	2	0	0	.	.	.	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.	.	.	.
	IPC	2	0	0	2	0	0	.	.	.	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		50	0	0	50	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	BENZENE	9	0	1	8	0	1	8	0	0	6	0	1
	TOLUENE	9	0	2	8	0	4	8	0	3	6	0	1
	ETHYLBENZENE	9	0	6	8	0	6	8	0	4	6	0	3
	P-XYLENE	9	0	0	8	0	0	8	0	0	6	0	0
	M-XYLENE	9	0	1	8	0	0	8	0	0	6	0	0
	O-XYLENE	9	0	1	8	0	3	8	0	1	6	0	1
	STYRENE	3	1	2	2	0	0	3	0	0	2	0	0
	1,1 DICHLOROETHYLENE	9	0	0	8	0	0	8	0	0	6	0	0
	METHYLENE CHLORIDE	9	0	0	8	0	0	8	0	0	6	0	0
	T1,2DICHLOROETHYLENE	9	0	0	8	0	0	8	0	0	6	0	0
	1,1 DICHLOROETHANE	9	0	0	8	0	0	8	0	0	6	0	0
	CHLOROFORM	9	3	3	8	8	0	8	8	0	6	6	0
	111, TRICHLOROETHANE	9	0	0	8	0	0	8	0	0	6	0	0
	1,2 DICHLOROETHANE	9	0	0	8	0	0	8	0	0	6	0	0
	CARBON TETRACHLORIDE	9	0	0	8	0	0	8	0	0	6	0	0
	1,2 DICHLOROPROPANE	9	0	0	8	0	0	8	0	0	6	0	0
	TRICHLOROETHYLENE	9	0	0	8	0	0	8	0	0	6	0	0
	DICHLOROBROMOMETHANE	9	2	2	8	8	0	8	7	1	6	6	0
	112 TRICHLOROETHANE	9	0	0	8	0	0	8	0	0	6	0	0
	CHLORODIBROMOMETHANE	9	2	0	8	8	0	8	8	0	6	6	0
	T-CHLOROETHYLENE	9	0	0	8	0	2	8	0	2	6	0	2
	BROMOFORM	9	0	2	8	0	8	8	0	8	6	0	5
	1122 T-CHLOROETHANE	9	0	0	8	0	0	8	0	0	6	0	0
	CHLOROBENZENE	9	0	0	8	0	0	8	0	0	6	0	0
	1,4 DICHLOROBENZENE	9	0	0	8	0	0	8	0	0	6	0	1

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM LAMBTON COUNTY

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	1,3 DICHLOROBENZENE	9	0	0	8	0	0	8	0	0	6	0	0
	1,2 DICHLOROBENZENE	9	0	0	8	0	0	8	0	0	6	0	0
	TRIFLUOROCHLOROTOLUE	3	0	0	3	0	0	2	0	0	3	0	0
	ETHLYENE DIBROMIDE	9	0	0	8	0	0	8	0	0	6	0	0
	TOTL TRIHALOMETHANES	9	2	2	8	8	0	8	8	0	6	6	0
*TOTAL SCAN VOLATILES		258	10	22	229	32	24	229	31	19	173	24	14
*TOTAL GROUP ORGANIC		1094	13	35	1001	33	41	734	31	33	547	24	23
TOTAL		1669	343	199	1524	336	178	1763	644	312	1324	483	233

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample

RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)	
JAN	0	.	.	.	.	.
FEB	0	.	.	.	.	.
MAR	4	.	.	.	.	.
MAY	0	.	.	.	.	.
JUN	0	.	.	.	.	.
JUL	0	.	.	.	.	.
AUG	0	.	.	.	.	.
SEP	18	.	.	.	.	.
OCT	0	.	.	.	.	.
NOV	1	.	.	.	.	.
STANDRD PLATE CNT MF (CT/ML)			DET'N LIMIT = 0		GUIDELINE = 500/ML (A1)	
JAN	168	0	.	0	.	1
FEB	TAW	TAW	.	TAW	.	TAW
MAR	0	.	.	0	.	2
MAY	1100	34	.	0	.	3
JUN	1800	2	.	.	.	0
JUL	139	2200	.	38	.	.
AUG	TAW	TAW	.	TAW	.	.
SEP	.	TAW	.	TAW	.	TAW
OCT	.	2 <<>	.	1 <<>	.	0 <<>
NOV	.	0 <<>	.	0 <<>	.	5 <<>
P/A BOTTLE ( )			DET'N LIMIT = 0		GUIDELINE = 0 (A1*)	
JAN	.	0	.	0	.	0
FEB	.	0	.	0	.	0
MAR	.	.	.	0	.	0
MAY	.	0	.	0	.	0
JUN	.	0	.	.	.	0
JUL	.	0	.	0	.	.
AUG	.	0	.	0	.	.
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)	
JAN	0	0	.	0	.	0
FEB	BDL	0	.	0	.	0
MAR	0	.	.	0	.	0
MAY	BDL	0	.	0	.	0
JUN	6	0	.	.	.	0
JUL	BDL	0	.	0	.	.
AUG	4	0	.	0	.	.
SEP	62	0	.	0	.	0
OCT	0	0	.	0 T48	.	0 T24
NOV	28 A3C	4 T48	.	2 T24	.	0 T24
T COLIFORM BCKGRD MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = N/A	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	1130	0	.	0	.	0
FEB	26	0	.	0	.	0
MAR	0	.	.	0	.	0
MAY	96	0	.	0	.	12
JUN	86	0	.	.	.	0
JUL	8	0	.	0	.	.
AUG	340	0	.	0	.	.
SEP	700	0	.	0	.	0
OCT	0	0	.	0 T48	.	0 T24
NOV	2400 >	6 T48	.	0 T24	.	42 T24

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.080	.100	.100	.100	.100
FEB	.	.130	.100	.100	.100	.100
MAR	.	.120	.100	.100	.100	.100
APR	.	.100	.100	.100	.	.
MAY	.	.120	.	.100	.100	.100
JUN	.	.100	.	.	.100	.100
JUL	.	.100	.100	.100	.	.
AUG	.	.150	.100	.100	.	.
SEP	.	.090	.100	.100	.100	.150
OCT	.	.090	.100	.100	.100	.150
NOV	.	.080	.120	.100	.150	.100
DEC	.	.080	.100	.100	.	.
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.750	.	.500	.450	.500
FEB	.	.570	.	.600	.300	.450
MAR	.	.800	.200	.700	.450	.500
APR	.	.750	.200	.600	.	.
MAY	.	.720	.	.600	.350	.550
JUN	.	.830	.	.	.450	.550
JUL	.	.590	.150	.700	.	.
AUG	.	.820	.100	.600	.	.
SEP	.	.800	.100	.600	.350	.550
OCT	.	.800	.500	.700	.500	.600
NOV	.	.930	.580	.700	.350	.700
DEC	.	.750	.300	.500	.	.
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.830	.100	.600	.550	.600
FEB	.	.700	.100	.700	.400	.550
MAR	.	.920	.300	.800	.550	.600
APR	.	.850	.300	.700	.	.
MAY	.	.840	.	.700	.450	.650
JUN	.	.930	.	.	.550	.650
JUL	.	.690	.250	.800	.	.
AUG	.	.970	.200	.700	.	.
SEP	.	.890	.200	.700	.450	.700
OCT	.	.890	.600	.800	.600	.750
NOV	.	1.050	.700	.800	.550	.800
DEC	.	.810	.400	.600	.	.
FLD PH (DIMENSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.000	7.700	7.500	7.650	7.500	7.500
FEB	8.200	7.500	7.400	7.500	7.500	7.500
MAR	7.800	7.300	7.500	7.500	7.500	7.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	8.420	7.300	7.600	7.600	.	.
MAY	8.100	7.400	7.600	7.500	7.500	7.500
JUN	8.280	7.750	.	.	7.500	7.500
JUL	8.180	8.190	7.500	7.500	.	.
AUG	8.250	7.440	7.500	7.500	.	.
SEP	8.170	6.930	7.500	7.500	7.500	7.500
OCT	8.220	7.330	7.600	7.600	7.500	7.500
NOV	8.000	7.350	7.500	7.500	7.500	7.500
DEC	8.400	8.390	7.500	7.500	.	.
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	2.000	4.000	13.000	9.000	10.000	4.000
FEB	1.000	2.000	17.000	6.500	11.500	2.000
MAR	.	5.500	18.000	5.000	11.000	2.000
APR	2.000	5.000	16.000	7.000	.	.
MAY	4.000	4.000	17.000	9.500	13.000	7.000
JUN	14.000	15.000	.	.	17.000	14.500
JUL	18.000	19.000	22.000	19.000	.	.
AUG	23.000	23.000	25.000	21.000	.	.
SEP	19.000	21.000	21.000	17.000	19.000	20.000
OCT	15.000	14.000	.	.	16.500	16.500
NOV	9.000	11.000	19.000	13.000	15.000	10.500
DEC	6.000	8.000	19.000	11.000	.	.
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	1.000	.900	.	.	.130	.080
FEB	2.800	.110	.240	.200	.150	.140
MAR	.550	.090	.120	.120	.150	.150
APR	.710	.100	.100	.110	.	.
MAY	2.250	.500	.060	.	.080	.080
JUN	.540	.060	.	.	.100	.070
JUL	1.780	.050	.110	.100	.	.
AUG	.560	.050	.080	.060	.	.
SEP	10.900	.050	.090	.100	.190	.160
OCT	.900	.070	.	.	.180	.200
NOV	.600	.050	.	.	.280	.160
DEC	1.700	.060	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	80.300	75.300	77.600	77.700	76.000	77.500
FEB	81.600	74.800	IIS	75.400	77.400	77.600
MAR	85.700	.	79.500	80.100	79.300	79.200
APR	88.000	78.400	78.900	78.900	.	.
MAY	86.100	79.200	79.700	81.300	79.800	79.700
JUN	86.300	79.900	.	.	80.000	80.200
JUL	87.400	79.600	80.900	81.600	.	.
AUG	86.200	79.300	78.900	79.400	.	.
SEP	83.600	IIS	76.900	77.500	76.400	76.300
OCT	84.100	76.600	78.000	78.600	77.400	77.600
NOV	84.000	77.400	79.400	78.000	77.500	77.700
DEC	84.100	74.400	77.100	76.600	.	.
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	27.600	27.600	28.200	28.200	28.200	28.200
FEB	27.400	28.800	IIS	29.000	29.800	28.000
MAR	28.200	.	28.000	28.600	28.400	27.600
APR	28.200	27.400	28.200	27.600	.	.
MAY	28.200	29.000	29.400	28.000	28.600	28.400
JUN	28.200	28.400	.	.	28.200	29.000
JUL	29.600	29.200	30.400	31.200	.	.
AUG	28.600	27.000	26.200	27.600	.	.
SEP	29.400	IIS	30.000	30.000	29.000	29.600
OCT	29.400	30.000	30.400	30.600	30.000	29.000
NOV	28.600	27.400	27.600	27.600	27.000	26.800
DEC	28.600	29.000	29.200	28.000	.	.
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	7.500	7.000	7.100	6.900	7.000	7.000
FEB	7.100	7.100	IIS	IIS	7.200	7.100
MAR	6.300	.	7.400	7.400	7.500	7.400
APR	5.800	6.800	6.900	6.700	.	.
MAY	5.800	6.800	6.900	6.800	6.900	6.800
JUN	6.300	7.700	.	.	7.500	7.500
JUL	6.400	7.800	7.600	7.600	.	.
AUG	6.800	7.900	8.300	8.000	.	.
SEP	5.900	IIS	7.600	7.500	7.400	7.300
OCT	7.100	7.400	7.400	7.200	7.000	6.900
NOV	5.800	7.300	7.400	7.300	7.300	7.200
DEC	5.700	6.900	6.900	6.900	.	.
COLOUR (NZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	
JAN	.500 <T	1.000 <T	BDL	BDL	BDL	BDL
FEB	1.000 <T	BDL	IIS	IIS	BDL	BDL
MAR	1.000 <T	.	BDL	.500 <T	.500 <T	.500 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	1.000 <T	.500 <T	BDL	BDL	.	.
MAY	.500 <T	.500 <T	.500 <T	.500 <T	.500 <T	.500 <T
JUN	1.500 <T	.500 <T	.	.	.500 <T	.500 <T
JUL	1.000 <T	.500 <T	1.000 <T	1.000 <T	.	.
AUG	1.000 <T	.500 <T	1.000 <T	.500 <T	.	.
SEP	.500 <T	IIS	.500 <T	.500 <T	.500 <T	BDL
OCT	.500 <T	.500 <T	BDL	BDL	.500 <T	.500 <T
NOV	1.000 <T	.500 <T	.500 <T	.500 <T	.500 <T	BDL
DEC	.500 <T	.500 <T	.500 <T	BDL	.	.
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)	
JAN	215	215	219	219	216	220
FEB	217	214	IIS	216	223	222
MAR	218	.	222	223	222	221
APR	216	216	217	216	.	.
MAY	219	223	223	227	225	225
JUN	221	226	.	.	226	225
JUL	225	227	228	229	.	.
AUG	224	226	229	228	.	.
SEP	218	IIS	226	226	225	225
OCT	218	220	223	224	222	222
NOV	213	218	223	219	220	219
DEC	213	218	220	219	.	.
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)	
JAN	.080	1.140	1.100	1.160	1.160	1.120
FEB	IIS	1.060	IIS	IIS	1.240	1.220
MAR	.090	.	1.230	1.220	1.240	1.110
APR	.080	1.200	1.090	1.070	.	.
MAY	.080	1.170	1.130	1.040	1.140	1.170
JUN	.080	1.150	.	.	1.120	1.050
JUL	.080	1.220	1.070	1.060	.	.
AUG	080	1.240	1.290	1.330	.	.
SEP	.060	IIS	1.120	1.120	1.160	1.200
OCT	.100	1.240	1.060	1.080	1.180	1.180
NOV	.080	1.140	1.120	1.100	1.120	1.100
DEC	.080	1.280	1.020	1.080	.	.
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)	
JAN	99.000	99.000	101.000	100.000	100.000	100.000
FEB	92.000	99.000	IIS	99.000	101.000	96.000
MAR	102.000	.	102.000	103.000	103.000	101.000
APR	102.000	99.000	101.000	98.000	.	.
MAY	101.000	102.000	102.000	99.000	101.000	101.000
JUN	101.000	101.000	.	.	101.000	103.000
JUL	106.000	105.000	108.000	110.000	.	.
AUG	101.000	98.000	95.000	100.000	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	103.000	IIS	104.000	104.000	102.000	104.000
OCT	104.000	106.000	107.000	109.000	107.000	103.000
NOV	101.000	98.000	99.000	99.000	97.000	97.000
DEC	103.000	104.000	104.000	101.000	.	.
IONCAL (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
FEB	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
APR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.	.
MAY	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUN	.000 NAF	.000 NAF	.	.	.000 NAF	.000 NAF
JUL	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.	.
AUG	4.781	7.107	9.807	5.232	.	.
SEP	1.871	.000 NAF	2.043	2.178	1.927	3.060
OCT	.556	3.894	3.706	7.182	5.988	1.418
NOV	1.122	.909	3.240	1.062	1.829	2.389
DEC	.376	3.034	3.147	2.041	.	.
LANGELIERS INDEX (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.030 NAF	.032 NAF	.083 NAF	.063 NAF	.025 NAF	.062 NAF
FEB	.133 NAF	.068 NAF	.	.034 NAF	.004 NAF	-.032 NAF
MAR	.146 NAF	.	-.021 NAF	-.179 NAF	-.066 NAF	-.089 NAF
APR	.128 NAF	-.234 NAF	-.179 NAF	-.088 NAF	.	.
MAY	.208 NAF	.062 NAF	.051 NAF	-.023 NAF	-.021 NAF	-.005 NAF
JUN	.228 NAF	.046 NAF	.	.	.113 NAF	.117 NAF
JUL	.263 NAF	.086 NAF	.160 NAF	.114 NAF	.	.
AUG	.252	.120	-.156	-.070	.	.
SEP	.094	.	.123	-.004	-.064	-.005
OCT	.196	.084	.136	.162	.147	.124
NOV	.226	-.150	-.088	.056	-.137	-.149
DEC	.156	-.043	.005	.054	.	.
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	7.300	7.400	7.300	7.200	7.200	7.100
FEB	5.800	6.500	IIS	6.400	6.500	6.400
MAR	7.600	.	7.600	7.700	7.800	7.700
APR	7.700	7.600	7.600	7.200	.	.
MAY	7.400	7.300	7.200	7.000	7.200	7.300
JUN	7.500	7.300	.	.	7.400	7.500
JUL	7.900	7.800	7.900	7.800	.	.
AUG	7.300	7.400	7.300	7.400	.	.
SEP	7.300	IIS	7.100	7.200	7.300	7.400
OCT	7.400	7.500	7.500	7.800	7.900	7.500
NOV	7.300	7.300	7.200	7.200	7.300	7.200
DEC	7.800	7.700	7.700	7.500	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	3.400	3.400	3.400	3.400	3.400	3.600
FEB	3.600	3.600	IIS	3.000	3.400	3.400
MAR	3.000	.	3.600	3.600	3.600	3.600
APR	3.800	3.800	3.800	3.200	.	.
MAY	3.400	3.400	3.400	3.200	3.400	3.400
JUN	3.400	3.400	.	.	3.400	3.600
JUL	3.400	3.600	3.600	3.600	.	.
AUG	3.600	3.600	3.600	3.800	.	.
SEP	3.600	IIS	3.400	3.400	3.600	3.400
OCT	4.000	3.600	3.600	4.800	3.800	3.600
NOV	3.800	3.400	3.400	3.600	3.600	3.600
DEC	3.600	3.600	3.400	3.600	.	.
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.002 <T	.006 <T	.012	.006 <T	.006 <T	.006 <T
FEB	.010	.002 <T	.040	.008 <T	.002 <T	BDL
MAR	.008 <T	.	.006 <T	.004 <T	.006 <T	.004 <T
APR	.020	.010	.012	.012	.	.
MAY	.016	.004 <T	.008 <T	.006 <T	.008 <T	.006 <T
JUN	.026	.008 <T	.	.	.014	.014
JUL	.008 <T	.006 <T	.002 <T	.008 <T	.	.
AUG	.034	.004 <T	.012	.008 <T	.	.
SEP	.002 <T	IIS	.006 <T	.002 <T	.002 <T	.010
OCT	.010	.012	.012	.014	.014	.014
NOV	.008 <T	BDL	.004 <T	.004 <T	.006 <T	.010
DEC	.018	.012	.012	.012	.	.
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	BDL	BDL	.001 <T	BDL	BDL	BDL
FEB	.002 <T	.001 <T	.004 <T	.001 <T	BDL	BDL
MAR	.002 <T	.	.001 <T	BDL	BDL	BDL
APR	.003 <T	.001 <T	.001 <T	.001 <T	.	.
MAY	.003 <T	BDL	.002 <T	BDL	.001 <T	BDL
JUN	.006	.001 <T	.	.	.010	.015
JUL	.004 <T	.001 <T	.001 <T	.002 <T	.	.
AUG	.004 <T	.003 <T	.001 <T	.002 <T	.	.
SEP	.005	IIS	.002 <T	.001 <T	.001 <T	BDL
OCT	.008	.002 <T	.006	.003 <T	.003 <T	.001 <T
NOV	.006	BDL	.001 <T	.003 <T	.004 <T	.006
DEC	.002 <T	.001 <T	.001 <T	.001 <T	.	.
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)	
JAN	.285	.280	.270	.275	.280	.275
FEB	.350	.360	.345	.340	.335	.355
MAR	.310	.	.320	.315	.320	.320
APR	.325	.320	.315	.325	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.335	.345	.320	.335	.335	.320
JUN	.300	.295	.	.	.310	.315
JUL	.285	.285	.280	.280	.	.
AUG	.255	.230	.270	.245	.	.
SEP	.245	IIS	.245	.240	.255	.235
OCT	.260	.265	.255	.240	.260	.270
NOV	.275	.275	.275	.280	.280	.280
DEC	.305	.300	.305	.295	.	.
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A	
JAN	.120	.150	.110	.110	.110	.120
FEB	IIS	.110	IIS	IIS	.100	.100
MAR	.150	.	.110	.090 <T	.120	.110
APR	.250	.120	.120	.120	.	.
MAY	.150	.080 <T	.190	.090 <T	.160	.130
JUN	.375	.100	.	.	.110	.110
JUL	.190	.130	.140	.160	.	.
AUG	.160	.100	.090 <T	.100	.	.
SEP	.200	IIS	.120	.110	.150	.120
OCT	.150	.070 <T	.100	.080 <T	.080 <T	.080 <T
NOV	.120	.090 <T	.080 <T	.080 <T	.100	.090 <T
DEC	.140	.090 <T	.080 <T	.090 <T	.	.
PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.090	8.120	8.150	8.130	8.100	8.130
FEB	8.190	8.140	IIS	8.100	8.050	8.040
MAR	8.170	.	8.040	7.870	7.990	7.980
APR	8.140	7.840	7.880	7.980	.	.
MAY	8.230	8.110	8.090	8.030	8.030	8.050
JUN	8.250	8.100	.	.	8.170	8.160
JUL	8.260	8.130	8.180	8.120	.	.
AUG	8.270	8.200	7.940	8.000	.	.
SEP	8.110	IIS	8.170	8.040	8.000	8.050
OCT	8.210	8.130	8.170	8.190	8.190	8.180
NOV	8.250	7.930	7.980	8.130	7.950	7.940
DEC	8.180	8.030	8.060	8.130	.	.
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.001 <T	.002 <T	.	.	.	.
FEB	.001 <T	.003	.	.	.	.
MAR	.000 <T	.	.	.	.	.
APR	.002	.004	.	.	.	.
MAY	.000 <T	.004	.	.	.	.
JUN	.001 <T	.006	.	.	.	.
JUL	.000 <T	.004	.	.	.	.
AUG	.001 <T	.001 <T	.	.	.	.
SEP	.002	IIS	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.001 <T	.007	.	.	.	.
NOV	.000 <T	.004	.	.	.	.
DEC	.000 <T	.005	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	.004 <T	.004 <T	.	.	.	.
FEB	IIS	.003 <T	.	.	.	.
MAR	.004 <T	.	.	.	.	.
APR	.014	.003 <T	.	.	.	.
MAY	.003 <T	.003 <T	.	.	.	.
JUN	.017	.009 <T	.	.	.	.
JUL	.003 <T	.006 <T	.	.	.	.
AUG	BDL	.005 <T	.	.	.	.
SEP	BDL	IIS	.	.	.	.
OCT	.005 <T	.007 <T	.	.	.	.
NOV	.004 <T	.004 <T	.	.	.	.
DEC	.003 <T	.005 <T	.	.	.	.
TOTAL SOLIDS (MG/L)			DET'N LIMIT = 1.		GUIDELINE = 500 (A3)	
JAN	140 CRO	140 CRO	142 CRO	142 CRO	140 CRO	143 CRO
SULPHATE ( )			DET'N LIMIT = .200		GUIDELINE = 500. (A3)	
AUG	17.150	21.030	21.000	20.840	.	.
SEP	15.750	IIS	19.930	19.760	19.610	19.970
OCT	16.200	20.500	20.300	20.500	20.100	20.400
NOV	14.690	17.390	17.800	17.450	17.680	17.310
DEC	17.000	22.500	26.500	22.500	.	.
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)	
JAN	1.200	.100 <T	.150	.100 <T	.070 <T	.090 <T
FEB	IIS	.210	IIS	IIS	.160	.050 <T
MAR	.420	.	.080 <T	.060 <T	BDL	BDL
APR	8.400	.080 <T	.100	.020 <T	.	.
MAY	1.800	.200	.270	.180	.160	.150
JUN	.350	.130	.	.	.080	.100
JUL	1.700	.210	.480	.320	.	.
AUG	.590	.210	.220	.260	.	.
SEP	15.200	IIS	.830	.140 <T	.340	.360
OCT	1.200	.410	.390	.340	.210 <T	.320
NOV	.470	.270	.360	.270	.360	.400
DEC	1.260	.410	.380	.380	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)	
JAN	BDL	.020 <T	.020 <T	.100 <T	.080 <T	.050 <T
FEB	IIS	IIS	.020 <T	BDL	.030 <T	.070 <T
MAR	.030 <T	.	.020 <T	.020 <T	.150 <T	.060 <T
APR	BDL	BDL	.040 <T	.030 <T	.	.
MAY	BDL	BDL	BDL	BDL	.040 <T	BDL
JUN	BDL	.070 <T	.	.	.050 <T	BDL
JUL	BDL	.270 <T	.140 <T	.090 <T	.	.
AUG	BDL	BDL	BDL	.100 <T	.	.
SEP	BDL	BDL	BDL	BDL	.060 <T	.040 <T
OCT	BDL	.040 <T	BDL	BDL	BDL	BDL
NOV	.080 <T	.070 <T	.070 <T	.050 <T	.050 <T	.060 <T
DEC	BDL	IAW	BDL	BDL	.	.
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)	
JAN	114.840	89.320	56.840	51.040	49.880	49.880
FEB	IIS	IIS	41.760	49.880	51.040	49.880
MAR	4.292	.	44.080	48.720	48.720	52.200
APR	89.320	7.772	42.920	61.480	.	.
MAY	20.880	71.920	58.000	56.840	59.160	64.960
JUN	5.916	162.400	.	.	127.600	150.800
JUL	22.040	197.200	174.000	220.400	.	.
AUG	5.800	232.000	127.600	208.800	.	.
SEP	110.200	243.600	102.080	150.800	127.600	162.400
OCT	11.600	116.000	90.480	98.600	89.320	105.560
NOV	6.380	89.320	70.760	73.080	67.280	73.080
DEC	17.400	IAW	46.400	40.600	.	.
ARSENIC (MG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)	
JAN	IAW	IAW	IAW	IAW	.710 <T	.770 <T
FEB	IIS	IIS	.560 <T	.840 <T	.730 <T	.750 <T
MAR	.480 <T	.	.410 <T	.600 <T	.630 <T	.620 <T
APR	.500 <T	BDL	.230 <T	.350 <T	.	.
MAY	.420 <T	.640 <T	.550 <T	.540 <T	.610 <T	.530 <T
JUN	.390 <T	.820 <T	.	.	.720 <T	.680 <T
JUL	.430 <T	.680 <T	.480 <T	.570 <T	.	.
AUG	.360 <T	.810 <T	.420 <T	.810 <T	.	.
SEP	.690 <T	.860 <T	.530 <T	.650 <T	.680 <T	.940 <T
OCT	.580 <T	.690 <T	.750 <T	.780 <T	.720 <T	.800 <T
NOV	.630 <T	.710 <T	.620 <T	.680 <T	.580 <T	.670 <T
DEC	.820 <T	IAW	.830 <T	.720 <T	.	.
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)	
JAN	15.000	14.000	14.000	13.000	14.000	13.000
FEB	IIS	IIS	15.000	14.000	16.000	15.000
MAR	13.000	.	13.000	13.000	15.000	14.000

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DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	15.000	4.100	14.000	14.000	.	.
MAY	15.000	14.000	13.000	14.000	15.000	14.000
JUN	15.000	14.000	.	.	14.000	14.000
JUL	15.000	15.000	15.000	14.780	.	.
AUG	15.000	15.000	14.000	14.000	.	.
SEP	16.000	15.000	14.000	15.000	15.000	15.000
OCT	14.000	14.000	14.000	14.000	14.000	15.000
NOV	15.000	14.000	15.000	14.000	15.000	14.000
DEC	14.000	IAW	14.000	13.000	.	.
BORON (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)	
JAN	14.000 <T	14.000 <T	14.000 <T	13.000 <T	13.000 <T	13.000 <T
FEB	IIS	IIS	13.000 <T	12.000 <T	14.000 <T	14.000 <T
MAR	13.000 <T	.	12.000 <T	13.000 <T	14.000 <T	16.000 <T
APR	13.000 <T	12.000 <T	14.000 <T	14.000 <T	.	.
MAY	11.000 <T	10.000 <T	11.000 <T	9.700 <T	13.000 <T	12.000 <T
JUN	17.000 <T	13.000 <T	.	.	13.000 <T	15.000 <T
JUL	14.000 <T	15.000 <T	14.000 <T	13.000 <T	.	.
AUG	14.000 <T	15.000 <T	13.000 <T	33.000	.	.
SEP	21.000	35.000	13.000 <T	22.000	19.000 <T	35.000
OCT	13.000 <T	17.000 <T	21.000	20.000 <T	31.000	33.000
NOV	44.000	46.000	44.000	42.000	31.000	46.000
DEC	19.000 <T	IAW	41.000	30.000	.	.
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = .20 (H)	
JAN	BDL	BDL	BDL	BDL	BDL	BDL
FEB	IIS	IIS	BDL	BDL	BDL	BDL
MAR	.010 <T	.	.030 <T	BDL	.020 <T	.040 <T
APR	.040 <T	.020 <T	BDL	.020 <T	.	.
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	.030 <T	BDL	.	.	.020 <T	BDL
JUL	.050 <T	.030 <T	BDL	.050 <T	.	.
AUG	BDL	BDL	BDL	.030 <T	.	.
SEP	.080 <T	.040 <T	BDL	.030 <T	.060 <T	.060 <T
OCT	BDL	.020 <T	.060 <T	BDL	.060 <T	BDL
NOV	.020 <T	BDL	.020 <T	.040 <T	BDL	.040 <T
DEC	BDL	IAW	.060 <T	BDL	.	.
CADMIUM (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)	
JAN	BDL	BDL	BDL	BDL	BDL	BDL
FEB	IIS	IIS	BDL	BDL	BDL	BDL
MAR	BDL	.	BDL	BDL	BDL	BDL
APR	BDL	BDL	.060 <T	BDL	.	.
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	.080 <T	.	.	BDL	.060 <T
JUL	BDL	BDL	.060 <T	BDL	.	.
AUG	BDL	BDL	BDL	BDL	.	.

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DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	IAW	BDL	BDL	.	.
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000 (H)	
JAN	.100 <T	.090 <T	.070 <T	.100 <T	.070 <T	.090 <T
FEB	IIS	IIS	.070 <T	.040 <T	.030 <T	.040 <T
MAR	.040 <T	.	.030 <T	BDL	.020 <T	BDL
APR	.230 <T	.030 <T	.480 <T	.410 <T	.	.
MAY	.050 <T	.040 <T	.060 <T	.050 <T	.050 <T	.060 <T
JUN	.070 <T	.060 <T	.	.	.080 <T	.080 <T
JUL	.070 <T	.070 <T	.030 <T	BDL	.	.
AUG	.130 <T	.090 <T	.140 <T	.110 <T	.	.
SEP	.250 <T	.110 <T	.070 <T	.070 <T	.110 <T	.100 <T
OCT	.130 <T	.150 <T	.220 <T	.150 <T	.100 <T	.140 <T
NOV	.030 <T	.030 <T	.040 <T	BDL	.040 <T	BDL
DEC	.220 <T	IAW	.170 <T	.180 <T	.	.
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	.300 <T	.290 <T	.270 <T	.300 <T	.310 <T	.290 <T
FEB	IIS	IIS	.340 <T	.410 <T	.450 <T	.430 <T
MAR	.220 <T	.	.250 <T	.250 <T	.560 <T	.710 <T
APR	.520 <T	.340 <T	.270 <T	.300 <T	.	.
MAY	.280 <T	.310 <T	.310 <T	.370 <T	.790 <T	.500 <T
JUN	.650 <T	.190 <T	.	.	.290 <T	.490 <T
JUL	.370 <T	.350 <T	.380 <T	.450 <T	.	.
AUG	.400 <T	.590 <T	.380 <T	3.400	.	.
SEP	1.200	2.600	.310 <T	1.300	.790 <T	2.300
OCT	.280 <T	1.300	2.600	2.800	5.300	5.200
NOV	5.600	6.000	5.500	5.200	3.100	5.900
DEC	1.100	IAW	4.900	3.000	.	.
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	.560 <T	7.300	100.000	3.100	8.300	1.400
FEB	IIS	IIS	180.000	4.300	14.000	1.500
MAR	52.000	.	140.000	3.000	13.000	1.400
APR	37.000	4.900	270.000	4.100 <T	.	.
MAY	.590 <T	2.400	12.000	2.600	13.000	1.800
JUN	.530 <T	.800 <T	.	.	9.600	1.600
JUL	45.000	13.000	5.800	2.190	.	.
AUG	.530 <T	2.300	110.000	2.400	.	.
SEP	36.000	7.300	120.000	1.700	8.200	1.900
OCT	44.000	.810 <T	35.000	2.800	9.100	1.500
NOV	.430 <T	.800 <T	40.000	2.100	10.000	1.500
DEC	.600 <T	IAW	11.000	2.800	.	.

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DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
IRON (UG/L)			DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)	
JAN	32.000 <T	32.000 <T	8.100 <T	6.600 <T	7.700 <T	6.700 <T
FEB	IIS	IIS	9.700 <T	10.000 <T	9.300 <T	5.300 <T
MAR	11.000 <T	.	12.000 <T	12.000 <T	6.000 <T	6.500 <T
APR	200.000	BDL	8.300 <T	8.300 <T	.	.
MAY	30.000 <T	23.000 <T	8.400 <T	7.200 <T	5.200 <T	9.700 <T
JUN	20.000 <T	15.000 <T	.	.	15.000 <T	16.000 <T
JUL	24.000 <T	16.000 <T	31.000 <T	36.000 <T	.	.
AUG	BDL	BDL	BDL	17.000 <T	.	.
SEP	210.000	210.000	6.400 <T	BDL	BDL	BDL
OCT	18.000 <T	BDL	BDL	6.500 <T	BDL	BDL
NOV	8.100 <T	BDL	BDL	8.400 <T	5.800 <T	BDL
DEC	28.000 <T	IAW	5.900 <T	7.400 <T	.	.
MERCURY (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)	
JAN	.010	.010	.	.010	.	.010
FEB	.010	.010	.	.010	.	.020
MAR	.010	.	.	.020	.	.020
APR	.020	.010	.	.010	.	.
MAY	.010	.010	.	BDL	.	.010
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	.020 <T	.020 <T	.	BDL	.	.
SEP	.020 <T	.020 <T	.	.020 <T	.	BDL
OCT	.070	.070	.	BDL	.	.020 <T
NOV	.080	.080	.	BDL	.	.030 <T
DEC	.100	.120	.	BDL	.	.
MANGANESE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)	
JAN	1.600	1.400	.780	.850	.410 <T	.730
FEB	IIS	IIS	.940	1.000	.490 <T	.810
MAR	.850	.	.600	.820	.350 <T	.610
APR	7.800	.100 <T	1.100	.870	.	.
MAY	1.400	.540	.660	.620	.360 <T	.360 <T
JUN	1.300	.270 <T	.	.	.350 <T	.360 <T
JUL	1.600	1.300	.740	1.600	.	.
AUG	.690	.510	1.100	1.000	.	.
SEP	8.300	2.300	1.500	.230 <T	.300 <T	.350 <T
OCT	.990	.160 <T	.260 <T	.610	.410 <T	.550
NOV	.600	.740	.360 <T	1.000	.340 <T	.410 <T
DEC	1.800	IAW	.440 <T	.720	.	.
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 500 (H)	
JAN	.520	.480 <T	.490 <T	.530	.480 <T	.490 <T
FEB	IIS	IIS	.500	.510	.490 <T	.500
MAR	.370 <T	.	.440 <T	.420 <T	.470 <T	.490 <T
APR	.360 <T	.520	.450 <T	.580	.	.

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DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.450 <T	.490 <T	.450 <T	.430 <T	.500 <T	.430 <T
JUN	.510	.520	.	.	.520	.540
JUL	.510	.620	.620	.580	.	.
AUG	.460 <T	.490 <T	.500 <T	.550	.	.
SEP	.300 <T	.510	.570	.570	.570	.550
OCT	.540	.550	.510	.540	.490 <T	.560
NOV	.480 <T	.520	.480 <T	.500 <T	.450 <T	.460 <T
DEC	.390 <T	IAW	.370 <T	.380 <T	.	.
NICKEL (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)	
JAN	.730 <T	.840 <T	.870 <T	.760 <T	.960 <T	.820 <T
FEB	IIS	IIS	.440 <T	BDL	.570 <T	BDL
MAR	BDL	.	.270 <T	BDL	.780 <T	BDL
APR	1.000 <T	BDL	2.100	.880 <T	.	.
MAY	.560 <T	.720 <T	.830 <T	.700 <T	1.500 <T	.310 <T
JUN	.310 <T	.500 <T	.	.	1.000 <T	.240 <T
JUL	.580 <T	.830 <T	.670 <T	.730 <T	.	.
AUG	.380 <T	.180 <T	53.000	BDL	.	.
SEP	.800 <T	.360 <T	.940 <T	.420 <T	16.000	.420 <T
OCT	.210 <T	.300 <T	9.700	.660 <T	4.800	BDL
NOV	BDL	BDL	2.600	BDL	BDL	BDL
DEC	1.000 <T	IAW	.940 <T	.940 <T	.	.
LEAD (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)	
JAN	.170 <T	.280	8.400	.500	1.200	.210
FEB	IIS	IIS	9.900	.240	1.900	.240
MAR	.190 <T	.	16.000	.320	1.700	.160 <T
APR	.500	.050 <T	18.000	.540	.	.
MAY	.070 <T	.170 <T	1.100	.340	1.700	.240
JUN	.080 <T	.050 <T	.	.	1.400	.250
JUL	.180 <T	.340	1.300	.450	.	.
AUG	.030 <T	.270	17.000	.590	.	.
SEP	.440	1.200	18.000	.390	1.600	.330
OCT	.170 <T	.050 <T	1.100	.490	1.300	.210
NOV	.060 <T	.030 <T	1.400	.330	1.500	.140 <T
DEC	.100 <T	IAW	1.700	.280	.	.
ANTIMONY (UG/L)			DET'N LIMIT = .050		GUIDELINE = 146. (D4)	
JAN	.150 <T	.140 <T	.300	.170 <T	.170 <T	.140 <T
FEB	IIS	IIS	.160 <T	.140 <T	.170 <T	.160 <T
MAR	.080 <T	.	.220	.080 <T	.180 <T	.150 <T
APR	.140 <T	.120 <T	.140 <T	.130 <T	.	.
MAY	.120 <T	.110 <T	.160 <T	.130 <T	.150 <T	.150 <T
JUN	.140 <T	.160 <T	.	.	.120 <T	.120 <T
JUL	.150 <T	.210	.190 <T	.160 <T	.	.
AUG	.600	.430	.540	.500	.	.
SEP	.410	.470	.180 <T	.170 <T	.550	.450

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DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.650	.530	.520	.550	.570	.730
NOV	.520	.510	.550	.560	.600	.540
DEC	.270	IAW	.250	.230	.	.
SELENIUM (MG/L)			DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)	
JAN	IAW	IAW	IAW	IAW	.620 <T	.510 <T
FEB	IIS	IIS	1.000 <T	.690 <T	.400 <T	.660 <T
MAR	BDL	.	.550 <T	BDL	1.000 <T	1.300 <T
APR	BDL	.390 <T	1.100 <T	1.300 <T	.	.
MAY	BDL	.410 <T	1.000 <T	BDL	BDL	.500 <T
JUN	.520 <T	.590 <T	.	.	.570 <T	.510 <T
JUL	.290 <T	1.400 <T	2.800 <T	.810 <T	.	.
AUG	BDL	1.300 <T	1.200 <T	2.100 <T	.	.
SEP	.670 <T	.630 <T	.340 <T	.340 <T	BDL	.770 <T
OCT	BDL	1.800 <T	3.100 <T	3.400 <T	2.000 <T	2.700 <T
NOV	.640 <T	1.400 <T	1.600 <T	2.000 <T	2.000 <T	1.500 <T
DEC	.840 <T	IAW	2.400 <T	2.500 <T	.	.
STRONTIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2000.(H)	
JAN	110.000	100.000	110.000	110.000	110.000	100.000
FEB	IIS	IIS	110.000	110.000	100.000	110.000
MAR	96.000	.	97.000	96.000	110.000	100.000
APR	110.000	42.000	110.000	110.000	.	.
MAY	100.000	97.000	98.000	100.000	100.000	94.000
JUN	110.000	110.000	.	.	110.000	110.000
JUL	100.000	120.000	120.000	120.000	.	.
AUG	110.000	110.000	110.000	120.000	.	.
SEP	110.000	110.000	110.000	110.000	100.000	100.000
OCT	100.000	100.000	110.000	120.000	120.000	110.000
NOV	99.000	100.000	98.000	100.000	99.000	96.000
DEC	93.000	IAW	95.000	92.000	.	.
TITANIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	2.800	2.100	2.200	2.400	2.900	2.800
FEB	IIS	IIS	4.800	4.800	5.500	5.300
MAR	4.600	.	5.600	5.900	6.800	6.300
APR	8.100	3.300	7.900	7.200	.	.
MAY	2.200	2.100	2.500	2.300	2.700	3.300
JUN	2.500	3.000	.	.	3.500	3.200
JUL	3.300	2.700	2.700	2.800	.	.
AUG	5.700	5.900	6.200	7.500	.	.
SEP	7.100	4.900	4.500	4.500	4.900	5.300
OCT	2.800	3.500	3.300	2.700	3.900	3.900
NOV	1.300 <T	1.600 <T	1.600 <T	1.300 <T	2.300	2.300
DEC	4.000	IAW	3.600	3.900	.	.
THALLIUM (UG/L)			DET'N LIMIT = .010		GUIDELINE = 13. (D4)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.010 <T	.010 <T	.010 <T	.010 <T	.010 <T	.010 <T
FEB	IIS	IIS	.020 <T	.020 <T	.040 <T	.010 <T
MAR	.010 <T	.	.020 <T	.010 <T	.020 <T	.020 <T
APR	BDL	BDL	BDL	BDL	.	.
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	BDL	BDL	.	.	BDL	BDL
JUL	.020 <T	BDL	BDL	BDL	.	.
AUG	BDL	BDL	BDL	.020 <T	.	.
SEP	BDL	BDL	.030 <T	.020 <T	.020 <T	.020 <T
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	IAW	BDL	BDL	.	.
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.240	.180 <T	.160 <T	.200	.200	.200
FEB	IIS	IIS	.130 <T	.190 <T	.190 <T	.230
MAR	.180 <T	.	.110 <T	.150 <T	.220	.230
APR	.220	.130 <T	.110 <T	.190 <T	.	.
MAY	.200 <T	.180 <T	.180 <T	.180 <T	.190 <T	.160 <T
JUN	.230	.220	.	.	.210	.210
JUL	.270	.210	.200 <T	.170 <T	.	.
AUG	.190 <T	.170 <T	.110 <T	.250	.	.
SEP	.220	.180 <T	.090 <T	.180 <T	.170 <T	.170 <T
OCT	.220	.190 <T	.110 <T	.130 <T	.130 <T	.170 <T
NOV	.170 <T	.180 <T	.130 <T	.160 <T	.200 <T	.150 <T
DEC	.160 <T	IAW	.100 <T	.100 <T	.	.
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100 (H)	
JAN	.310 <T	.390 <T	.350 <T	.380 <T	.370 <T	.380 <T
FEB	IIS	IIS	.260 <T	.310 <T	.360 <T	.330 <T
MAR	.180 <T	.	.320 <T	.340 <T	.360 <T	.330 <T
APR	.410 <T	.160 <T	.310 <T	.360 <T	.	.
MAY	.250 <T	.340 <T	.360 <T	.350 <T	.360 <T	.350 <T
JUN	.190 <T	.400 <T	.	.	.410 <T	.420 <T
JUL	.210 <T	.480 <T	.480 <T	.520	.	.
AUG	.190 <T	.470 <T	.420 <T	.600	.	.
SEP	.590	.660	.450 <T	.670	.630	.640
OCT	.270 <T	.570	.550	.580	.510	.590
NOV	.220 <T	.450 <T	.410 <T	.430 <T	.430 <T	.430 <T
DEC	.270 <T	IAW	.510	.500 <T	.	.
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5000. (A3)	
JAN	.920 <T	49.000	15.000	.860 <T	3.300	.720 <T
FEB	IIS	IIS	18.000	1.200	5.900	.780 <T
MAR	5.800	.	100.000	.930 <T	5.300	.800 <T
APR	5.400	1.100	73.000	1.600 <T	.	.
MAY	.850 <T	20.000	2.800	.900 <T	3.600	.880 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 2	
	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	.420 <T	.540 <T	.	.	3.300	.720 <T
JUL	3.100	40.000	4.100	2.890	.	.
AUG	.290 <T	27.000	43.000	1.200	.	.
SEP	4.100	35.000	93.000	1.400	3.600	1.000 <T
OCT	2.400	.690 <T	38.000	1.300	3.300	.800 <T
NOV	.400 <T	.500 <T	40.000	.780 <T	4.000	.490 <T
DEC	1.000 <T	IAW	2.700	1.000 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
	CHLOROAROMATICS					
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 1900 (D4)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	.	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	2.000 <T	.	BDL	.	2.000 <T
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROPHENOLS						
246-TRICHLOROPHENOL (NG/L)			DET'N LIMIT = 20.		GUIDELINE = 5000 (81)	
JUN	BDL	ILA	.	.	.	.
NOV	IRE	20.000 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB						
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
JAN	2.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
FEB	1.000 <T	3.000 <T	.	3.000 <T	.	2.000 <T
MAR	1.000 <T	.	.	1.000 <T	.	2.000 <T
APR	BDL	BDL	.	2.000 <T	.	.
MAY	2.000 <T	2.000 <T	.	1.000 <T	.	2.000 <T
JUN	BDL	BDL	.	.	.	BDL
JUL	2.000 <T	3.000 <T	.	2.000 <T	.	.
AUG	2.000 <T	3.000 <T	.	2.000 <T	.	.
SEP	2.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
OCT	BDL	3.000 <T	.	2.000 <T	.	2.000 <T
NOV	3.000 <T	2.000 <T	.	3.000 <T	.	3.000 <T
DEC	2.000 <T	2.000 <T	.	3.000 <T	.	.
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	.	.	BDL	.	BDL
APR	BDL	BDL	.	1.000 <T	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	1.000 <T	1.000 <T	.	1.000 <T	.	1.000 <T
DEC	BDL	BDL	.	1.000 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	BDL	BDL	.	.	.	.
FEB	1.000 <T	1.000 <T	.	.	.	.
MAR	BDL	.	.	.	.	.
APR	BDL	BDL	.	.	.	.
MAY	BDL	BDL	.	.	.	.
JUN	1.800	1.600	.	.	.	.
JUL	1.600	.800 <T	.	.	.	.
AUG	BDL	BDL	.	.	.	.
SEP	BDL	BDL	.	.	.	.
OCT	.800 <T	.600 <T	.	.	.	.
NOV	1.000 <T	.400 <T	.	.	.	.
DEC	1.000	.600 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
BENZENE ( )			DET'N LIMIT = .050		GUIDELINE = 5.0 (B1)	
JAN	.	.	.	.	.	.050 <T
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	.050 <T	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.050 <T	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.	.	BDL	.	.
TOLUENE ( )			DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)	
JAN	.	.	.	.	.	BDL
APR	BDL	.100 <T	.	.050 <T	.	.
MAY	BDL	.100 <T	.	.100 <T	.	.150 <T
JUN	BDL	BDL	.	.	.	BDL
JUL	.050 <T	BDL	.	BDL	.	.
AUG	BDL	.050 <T	.	.050 <T	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.050 <T	.	BDL	.	BDL
NOV	.100 <T	BDL	.	BDL	.	BDL
DEC	BDL	.	.	BDL	.	.
ETHYLBENZENE ( )			DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)	
JAN	.	.	.	.	.	BDL
APR	BDL	.050 <T	.	BDL	.	.
MAY	BDL	.050 <T	.	.050 <T	.	.050 <T
JUN	.050 <T	.250 <T	.	.	.	.100 <T
JUL	.050 <T	.100 <T	.	.050 <T	.	.
AUG	.100 <T	.050 <T	.	.100 <T	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	.100 <T	.100 <T	.	.050 <T	.	.100 <T
NOV	.050 <T	BDL	.	BDL	.	BDL
DEC	.050 <T	.	.	BDL	.	.
M-XYLENE ( )			DET'N LIMIT = .100		GUIDELINE = 300 (B4)	
JAN	.	.	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	.100 <T	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	BDL	.	.	BDL	.	.
O-XYLENE ( )			DET'N LIMIT = .050		GUIDELINE = 300 (B4)	
JAN	.	.	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	.050 <T	.	.050 <T
JUN	.050 <T	.050 <T	.	.	.	BDL
JUL	BDL	.050 <T	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.050 <T	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.	.	BDL	.	.
STYRENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)	
OCT	.150 <T	BDL	.	BDL	.	BDL
NOV	.700 UCS	BDL	.	BDL	.	BDL
DEC	.300 <T	.	.	BDL	.	.
1,1 DICHLOROETHYLENE ( )			DET'N LIMIT = .100		GUIDELINE = 7.0 (D1)	
JAN	.	.	.	.	.	.000 SPS
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.	.	BDL	.	.
CHLOROFORM ( )			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
JAN	.	.	.	.	.	17.500
APR	.600 <T	27.300	.	25.700	.	.
MAY	.100 <T	24.400	.	23.300	.	24.600
JUN	BDL	21.900	.	.	.	23.300
JUL	1.200	24.300	.	19.300	.	.
AUG	7.100	29.000	.	30.400	.	.
SEP	BDL	28.600	.	29.500	.	29.700
OCT	20.600	30.400	.	31.400	.	32.000
NOV	.100 <T	21.300	.	17.600	.	20.900
DEC	BDL	.	.	17.500	.	.
DICHLOROBROMOMETHANE ( )			DET'N LIMIT = .050		GUIDELINE = 350 (A1+)	
JAN	.	.	.	.	.	9.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	.100 <T	11.550	.	11.450 <T	.	.
MAY	.100 <T	11.700	.	11.100	.	11.750
JUN	BDL	10.250	.	.	.	11.650
JUL	BDL	10.800	.	9.100	.	.
AUG	4.400	14.100	.	15.000	.	.
SEP	BDL	11.400	.	12.600	.	12.100
OCT	11.300	10.950	.	11.650	.	11.850
NOV	BDL	9.100	.	8.850	.	9.200
DE.	BDL	.	.	9.400	.	.
CHLORODIBROMOMETHANE ( )			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
JAN	.	.	.	.	.	3.800
APR	BDL	4.800	.	6.200	.	.
MAY	BDL	4.600	.	4.500	.	4.800
JUN	BDL	5.000	.	.	.	7.200
JUL	BDL	4.300	.	4.200	.	.
AUG	2.600	5.800	.	6.600	.	.
SEP	BDL	5.000	.	4.800	.	5.000
OCT	4.900	4.700	.	4.800	.	5.000
NOV	BDL	3.800	.	3.900	.	3.900
DEC	BDL	.	.	4.700	.	.
T-CHLOROETHYLENE ( )			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)	
JAN	.	.	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	.050 <T	.	.100 <T	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	.050 <T	.	.050 <T
OCT	BDL	.100 <T	.	BDL	.	.050 <T
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	.	.	BDL	.	.
BROMOFORM ( )			DET'N LIMIT = .200		GUIDELINE = 350 (A1+)	
JAN	.	.	.	.	.	BDL
APR	BDL	.400 <T	.	.400 <T	.	.
MAY	BDL	.400 <T	.	.400 <T	.	.400 <T
JUN	BDL	.200 <T	.	.	.	.200 <T
JUL	BDL	.200 <T	.	.200 <T	.	.
AUG	.400 <T	.400 <T	.	.600 <T	.	.
SEP	BDL	.400 <T	.	.400 <T	.	.400 <T
OCT	.200 <T	.400 <T	.	.400 <T	.	.400 <T
NOV	BDL	.400 <T	.	.400 <T	.	.400 <T
DEC	BDL	.	.	.400 <T	.	.
1,4 DICHLOROBENZENE ( )			DET'N LIMIT = .100		GUIDELINE = 5.0 (B1)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM SARNIA (LAMBTON COUNTY WTP) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	.	.	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL
JUL	BDL	BDL	.	BDL	.	.
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	.300 <T
DEC	BDL	.	.	BDL	.	.
TOTL TRIHALOMETHANES ( )			DET'N LIMIT = .500		GUIDELINE = 350 (A1)	
JAN	.	.	.	.	.	30.800
APR	.700 <T	44.050	.	43.750	.	.
MAY	BDL	41.100	.	39.300	.	41.550
JUN	BDL	37.350	.	.	.	42.350
JUL	1.200 <T	39.600	.	32.800	.	.
AUG	14.500	49.300	.	52.600	.	.
SEP	BDL	45.400	.	47.300	.	47.200
OCT	37.000	46.450	.	48.250	.	49.250
NOV	BDL	34.600	.	30.750	.	34.400
DEC	BDL	.	.	32.000	.	.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	^{o}C	N/A	<15 ^{o}C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	146. (D4)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	100000. (A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000.	(B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	87000.	(B3)
PICHLORAM	NG/L	100.	2450000.	(D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	14000.	(A1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION	NG/L	N/A	N/A	
MALATHION	NG/L	20.	160000.	(G)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(B3)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	35000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)